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**BOX AF** PATENT

#23 Declaration  
11-6-96

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

J. M. Steinke

A.P. Shepherd

Serial No.: 07/953,680

Filed: September 29, 1992

For: METHOD AND APPARATUS  
FOR DIRECT SPECTROPHOTOMIC  
MEASUREMENTS IN  
UNALTERED WHOLE BLOOD

Examiner: K. Hantis

Group Art Unit: 2505

Atty. Dkt.: UTSK:142/BAH

**CERTIFICATE OF MAILING**  
**37 C.F.R. § 1.8**

**SECOND SUPPLEMENTAL DECLARATION OF A.P. SHEPHERD  
UNDER 37 C.F.R. § 1.132**

Commissioner of Patents  
and Trademarks  
Washington, D.C. 20231

Sir:

I, A. P. SHEPHERD, do hereby declare and state:

1. I am a co-inventor of the above-identified patent application, and remain the President and Chief Executive Officer of A-VOX Systems, Inc. I signed Declarations Under 37 C.F.R § 1.132 on December 12, 1994, and on August 14, 1995. I have reviewed the statements in my

previous declarations, and believe them to be accurate today except as updated by statements herein.

2. Without the aid of distributors, and using only direct-mail advertising, A-VOX Systems, Inc. sold approximately 34 AVOXimeter 1000's to hospitals in the United States in 1993. This resulted in cash receivables totaling \$267,582 for the oximeter and disposable optical cuvettes used with the oximeter.

3. In 1994, A-VOX Systems, Inc. sold approximately 94 AVOXimeter 1000's and continued to sell disposable cuvettes, resulting in accounts receivable of \$692,665, for the oximeter and disposable cuvettes. This represents over 250% of the cash receivables for 1993.

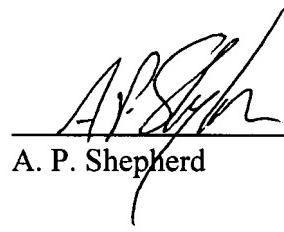
4. In 1995, A-VOX Systems, Inc. sold approximately 100 AVOXimeter 1000's and continued to sell disposable cuvettes, resulting in accounts receivable of \$772,527 for the oximeter and disposable cuvettes. This represents over 110% of the cash receivables for 1994.

5. In the first three quarters of 1996, A-VOX Systems, Inc. has sold approximately 140 AVOXimeter's and continued to sell disposable cuvettes, resulting in accounts receivable of \$916,992 for the oximeter and disposable cuvettes. This represents over 115% of the cash

receivables for the entirety of 1994. The projected gross sales for 1996 are approximately \$1.2 million, which would represent over 155% of the cash receivables for 1995.

6. I hereby declare that all of the statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful, false statements and the like are punishable by fine and/or imprisonment under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the above-identified application, or any patent issuing therefrom.

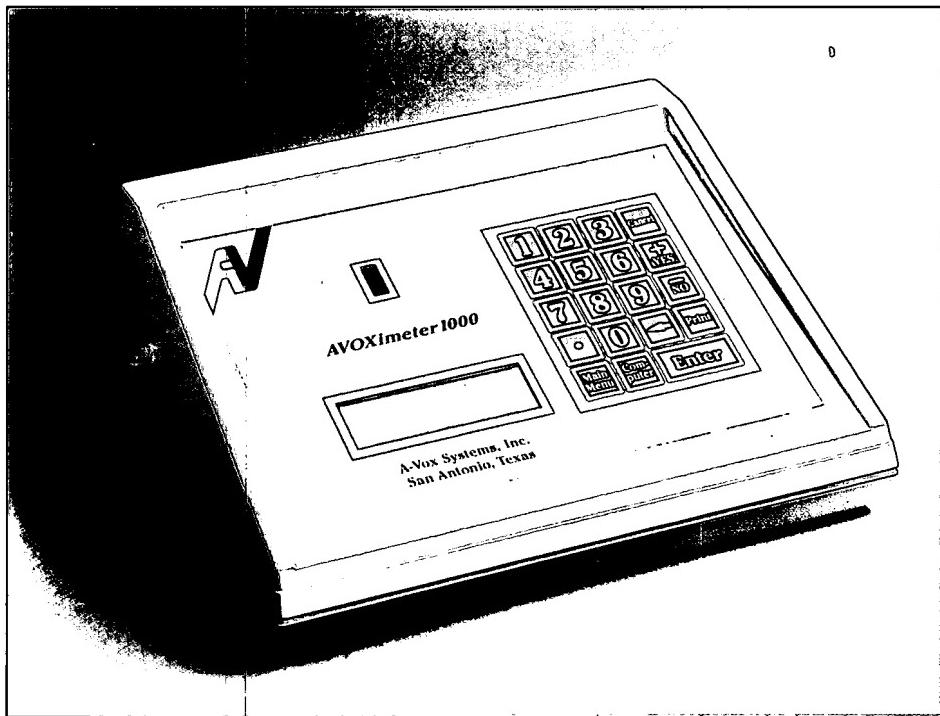
15 Oct 1996  
Date

  
A. P. Shepherd

# AVOXimeter 1000\*

More than an oximeter  
Designed specifically for the cardiac cath-lab

A.VOX Systems, Inc.  
14316 Grey Fox Terrace  
San Antonio, Texas, USA  
78255-1210



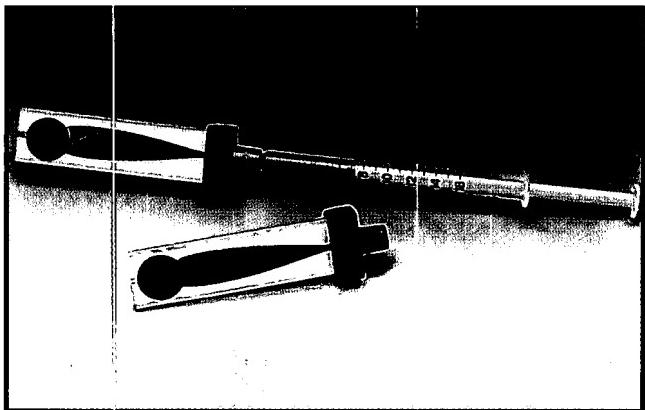
- Fast, accurate, inexpensive measurements:  
*O<sub>2</sub> Saturation*  
*O<sub>2</sub> Content*  
*Total Hemoglobin*
- No interference from Cardio-Green® dye or carboxy- or methemoglobin
- Nine computed hemodynamic variables (including Fick Principle cardiac output)
- Easy-to-use disposable cuvettes\*
- No maintenance
- Controls for easy calibration

\* patent pending

# AVOXimeter 1000

An advanced oximeter for fast, accurate, inexpensive measurements

## Safe, convenient, disposable cuvettes



No sample preparation.

Simply inject sample into cuvette and insert cuvette into oximeter.

Sealed disposable cuvettes eliminate maintenance and assure operator safety.

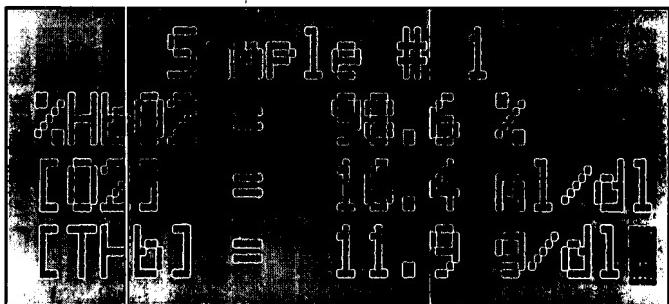
Sample is analyzed in less than 10 seconds.

Illuminated display for easy reading in dim procedure room.

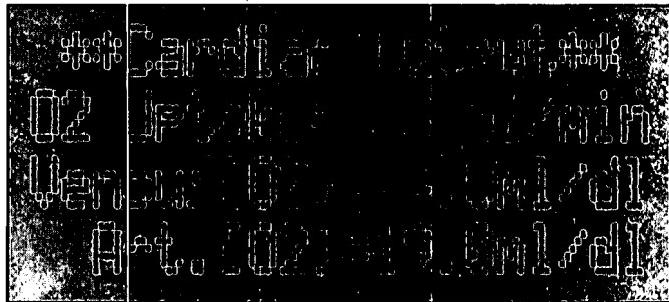
Data are stored for later analysis or printing.

Easy menu-driven operations.

Hemodynamic computations including Fick Principle cardiac output.



## Hemodynamic computations



## A-VOX Systems, Inc.

15315 Grey Fox Terrace  
San Antonio, Texas 78255-1210  
800-225-AVOX  
(800-225-2869)  
210-695-8242

## Specifications

### Measurements and Operating Ranges

Oxyhemoglobin saturation	0 - 100%
Total hemoglobin concentration	4 - 25 g/dl
Oxygen content	0.35 ml O <sub>2</sub> /dl

### Accuracy

%HbO <sub>2</sub> saturation	1%
Total hemoglobin	
Less than 10g/dl	0.35 g/dl
More than 10g/dl	0.45 g/dl

### Precision

%HbO <sub>2</sub> saturation	0.5%
Total hemoglobin	0.3 g/dl

### Sample

Type	Whole blood
Volume	50 µl

Time per Sample 7 - 10 sec

Number of Wavelengths 7

Calibration Controls

Hemodynamic Computations 9

No Interference from  
Cardio-Green dye  
Bilirubin  
Hemolysis  
Carboxyhemoglobin  
Methemoglobin

Power 115/220 VAC  
50 - 60 Hz

Dimensions 10"x 8" x 3.75"  
(25.4 x 20.4 x 9.5 cm)

Weight 4 lbs (1.8 kg)

Printer Port Serial

### Approvals

FCC	Class A
UL	544